

(19) World Intellectual Property Organization
International Bureau



(43) International Publication Date
26 April 2001 (26.04.2001)

PCT

(10) International Publication Number
WO 01/29646 A1

(51) International Patent Classification⁷: **G06F 3/03**,
G06K 11/18, A63F 13/06, G05G 9/02

(21) International Application Number: PCT/SE00/02046

(22) International Filing Date: 20 October 2000 (20.10.2000)

(25) Filing Language: Swedish

(26) Publication Language: English

(30) Priority Data:
9903820-0 22 October 1999 (22.10.1999) SE

(71) Applicant and

(72) Inventor: KARLSSON, Lars-Eric [SE/SE]; Takdroppsgatan 98, S-931 51 Skellefteå (SE).

(74) Agents: GRANSTRÖM, Lars-Eric et al.; Stockholms Patentbyrå Zacco AB, Box 23101, S-104 35 Stockholm (SE).

DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW.

(84) Designated States (*regional*): ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG).

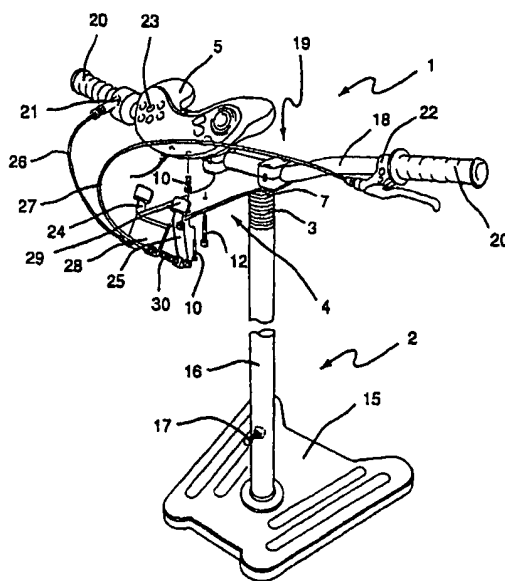
Published:

- With international search report.
- Before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments.

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(81) Designated States (*national*): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CR, CU, CZ,

(54) Title: FICTITIOUS CONTROL AND HAND MANOEUVRE DEVICE



(57) Abstract: The invention relates to a fictitious control and hand manoeuvre device intended to be used with the type of hand-held control and guidance devices (5) equipped with a gyro that are used to control computer games or similar. To further strengthen the experience of playing the game, the device according to the invention includes a first section (1) that is supported in a multiple-axial moveable manner by a second section (2), whereby the first section includes a holding device (4) arranged to support and hold in position a control and guidance device (5) equipped with a gyro, a steering device (18) that, by grasping hold of, the user can use to manoeuvre the first section (1) relative to the second section (2), as well as hand-control devices (21, 22) arranged on the steering device and positioned so that they are easily accessible for the user when grasping the steering device and arranged to affect by movement the hand-control device (23) with which the supported control and guidance device is equipped.

WO 01/29646 A1

Fictitious control and hand manoeuvre device

The present invention relates to a fictitious control and hand manoeuvre device according to the introduction to claim 1.

It is known to use a type of hand-manoeuvred control and guidance device in the form of so-called "gamepads" or so-called "joysticks" to steer and control game scenarios of computer games. Such devices are commonly designed as a hand-held box-like base section equipped with sets of buttons and/or movement-affected joysticks for controlling the game scenario; for example, to shoot, run, jump, accelerate, brake, change gear, steer, etc. The market for games has thus far experienced an exceptionally great interest and is today also the segment within computer technology that is primarily leading the development for advanced programming technology.

As computer games become more advanced, and as a component of this ever-increasing realism, the demands made on the control and guidance devices used with the games also increase. As an element in further strengthening the sense of realism with computer games, a type of hand-held control and guidance device that includes a gyro has recently been developed. By means of the extra degrees of freedom of movement that are obtained through this means, the user has, in a most tangible way, been given greater possibilities to participate in the game scenario in a more active and realistic manner.

Even if the computer game hand-held control and guidance devices equipped with a gyro that are known to date have noticeably increased the realistic feeling and experience of the user, there is nevertheless a desire to further increase the realism and thereby also the feeling experienced from the game.

The objective of the present invention is thus to achieve a fictitious control and hand manoeuvre device that makes this wish possible.

This objective is realised by the fictitious control and hand manoeuvre device according to the invention having the features and characteristics stated in claim 1.

Other features and benefits of the invention are evident from the other claims and from the following description of an example of an embodiment with reference to the enclosed drawing in which **Fig. 1** shows a perspective view of a fictitious control and hand manoeuvre device according to the invention with partially separated parts and to which a conventional type of control and guidance device equipped with a gyro is arranged, and **Fig. 2** shows a side view of a section of the fictitious control and hand manoeuvre device according to the invention as shown in Fig. 1 fitted with the conventional type of control and guidance device.

The fictitious control and hand manoeuvre device according to the invention shown in Fig. 1 includes a first section generally designated with the reference number 1 that is supported in a multiple-axial moveable manner by a second section generally designated with the reference number 2. To obtain a mutual multiple-axial movement between the two, the sections are joined by a spring device 3 of the coiled spring type. It should be realised that by an appropriate choice of the design of the coiled spring 3 and its chosen spring constant, the first section 1 will, without external influence, seek to attain the position shown in Fig. 1, i.e. a normal and constant initial starting position.

The first section 1 includes a holding device generally designated by 4 and designed to support and hold in position a conventional control and guidance device 5 equipped with a gyro. To realise this objective, holding device 4 includes a support 6 that is formed from an essentially rectangular-shaped sheet metal plate whose one short side is, at 7, firmly attached at the area of transition between the first section 1 and the spring device 3 so that the main section of the metal plate projects out as a cantilever from the said area in a console-like manner. More specifically, it should be realised that the console-like shelf formed by the support 6 is located in front of the user and facing away from them.

As shown in Fig. 2, holes 8 are made in the support 6 formed by the metal plate through which screws 9 extend for screwing fast and thereby joining the control and guidance device equipped with a gyro to the support.

As the majority of the known manufacturers of control and guidance devices use assembly screws that are accommodated in a recessed manner in deep dead holes located along the periphery of the underside of the bottom half when joining together the halves that together form the box-like casing of the control device 5, the control and guidance device 5 equipped with a gyro can easily be brought to attach to the support 6 without having to tamper with the casing. As shown in Fig. 1, in this case, a so-called expander plug 10 that has been accommodated in the dead holes located in the underside of the casing is used to interact with the screws 9 for firmly attaching the control and guidance device 5 at the upper side of the support 6. As mounting the control and guidance device 5 in this way can be done in a secure manner without tampering with its casing, the guarantee pledges of the manufacturer of the control and guidance device 5 can be made to apply without any unnecessary discussions about the user causing damage having to be brought up.

As is best evident from Fig. 2, the task of the adjusting device 11 arranged at the holding device 4 is to allow adjustment or calibration of the control and guidance device 5 supported by the first section 1 to an initial starting position essentially coinciding with the

horizontal plane. Adjusting device 11 includes an adjusting screw 12 that acts against the rear section of the control and guidance device 5 and that is accommodated in a threaded hole 13 in support 6. During adjustment and calibration, the control and guidance device 5 can be brought to move in the manner illustrated by the curved double arrow 14 in Fig. 2.

5 As is evident from Fig. 1, the second section 2 of the fictitious control and hand manoeuvre device includes a rod 16 projecting from a base section 15 in the form of two tubes where one is accommodated in the other and that is adjustable in an axial direction in a telescope-like manner and lockable in a specified position by means of an adjustment screw 17. In this way, the steering device designated by 18 and located on the first section 1 can be
10 adjusted in height so that it can be positioned at a comfortable height for the user.

A holding device 19 that allows a detachable attachment of the steering device 18 to the first part 1 is arranged on the upper side of the attachment of the support 4 formed from metal plate to the spring device. In the embodiment of the invention described here, the holding device 19 includes clamps that act via a screw device. As the said steering device 18
15 can be easily exchanged, the fictitious control and hand manoeuvre device according to the invention acquires the advantage that it can easily be equipped with different types of steering device 18 where these have simply been chosen to or given a design to meet the requirements of the game or game scenario in question. In other words, it can be considered to provide the device according to the invention with other steering devices 18 than that shown here. It
20 could, for example, be provided with steering wheels, helms, etc.

As is evident from Fig. 1, it is the steering device 18 in the form of a handle bar with which, merely as an example, the embodiment of the invention described here is equipped, together with hand grips 20 at its outer ends that the user can grasp hold of for manoeuvring the first part relative to the second part. Hand-control devices in the form of
25 known controls that more specifically include an acceleration hand-control grip 21 and a brake hand-control grip 22 respectively are arranged in the area of the said hand-grips 20. Hand-control devices 21, 22 are appropriately positioned in such a manner that they are easily accessible for manoeuvring, even when grasping the hand-grip 20.

The said hand-control devices 21, 22 or, more specifically, the acceleration
30 hand-control grip and the brake hand-control grip respectively, are arranged to affect by movement the hand-control device that, in the form of the keypads or push-buttons generally designated by 23, is located on the outside of the supported control and guidance device 5 equipped with a gyro. For this purpose, a first and a second double-armed link 24 respective
25 are mounted to pivot on either side of the support 6 formed from metal plate where one of

the ends of the double-armed link 24 is joined with the acceleration hand-control grip 21 via a first sliding cable 26 so that it can transfer movement, and where one of the ends of the second double-armed link 25 is joined with the brake hand-control grip 22 via a second sliding cable 27 so that it can transfer movement.

5 As is evident from Figs. 1 and 2, the lower attachment points on the casing of the said respective sliding cables 26, 27 are arranged on a section 28 that is folded down at the front end of the support 6.

10 To even out or rather limit the force with which the respective free second ends of the double-armed lever rods act on the keypads and/or push-buttons 23 of the control and guidance device 5, cushion-like elastic elements 29 are arranged on the active end parts of the respective link-arm 24, 25. This cushion-like elastic element 29 is appropriately made of soft rubber or a foam rubber material.

15 The return of the hand-control devices 21, 22 or, more specifically, the return movement of the acceleration hand-control grip and the brake hand-control grip respectively, is assisted by the spring device 30 arranged between the folded-down section 28 of the support 6 and the respective double-armed link 24, 25.

 The present invention is not limited to that described above and shown in the drawings but can be changed and modified in a number of ways within the scope of the invention as stated in the following claims.

20 -----

Claims

1. Fictitious control and hand manoeuvre device intended to be used with the type of hand-held control and guidance devices (5) equipped with a gyro that are used to control computer games or similar c h a r a c t e r i s e d in that it includes a first section (1) that is supported in a multiple-axial moveable manner by a second section (2) whereby the first section includes a holding device (4) arranged to support and hold in position the control and guidance device (5) equipped with a gyro, a steering device (18) that, by grasping hold of, the user can use to manoeuvre the first section (1) relative to the second section (2), as well as hand-control devices (21, 22) arranged on the steering device and positioned so that they are easily accessible for the user when grasping the steering device and that are arranged to affect by movement the hand-control device (23) with which the supported control and guidance device is equipped.

2. Fictitious control and hand manoeuvre device according to claim 1 c h a r a c t e r i s e d in that the first section (1), when not affected, is arranged to return to a specific starting position relative to the second part (2).

3. Fictitious control and hand manoeuvre device according to claim 2 c h a r a c t e r i s e d in that the holding device (4) includes an adjusting device (11) for adjusting the control and guidance device (5) supported by the first section (1) to a starting position that essentially coincides with the horizontal plane.

4. Fictitious control and hand manoeuvre device according to claim 3 c h a r a c t e r i s e d in that the holding device (4) includes a support (6) for supporting the control and guidance device (5) plus means of attachment for firmly attaching the control and guidance device at the support, whereby the adjusting device (11) acts between the support and the control and guidance device.

5. Fictitious control and hand manoeuvre device according to claim 1 c h a r a c t e r i s e d in that the first section (1) includes a holding device (19) for the detachable attachment of the steering device (18) to the said first part.

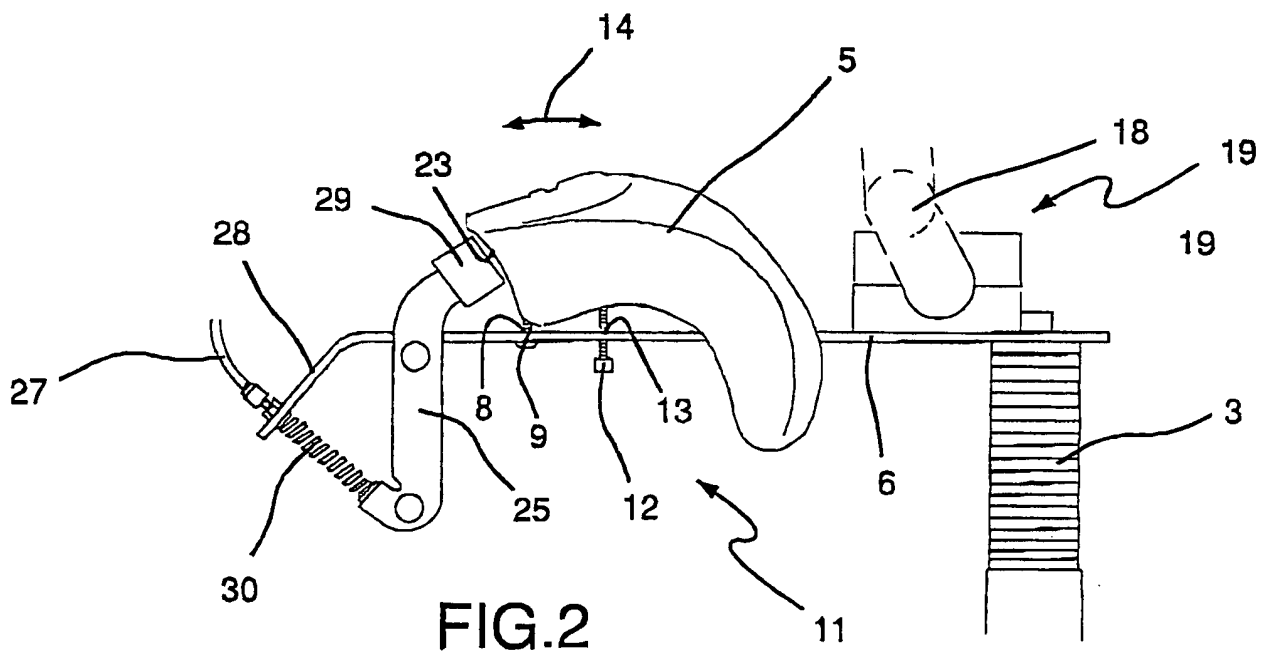
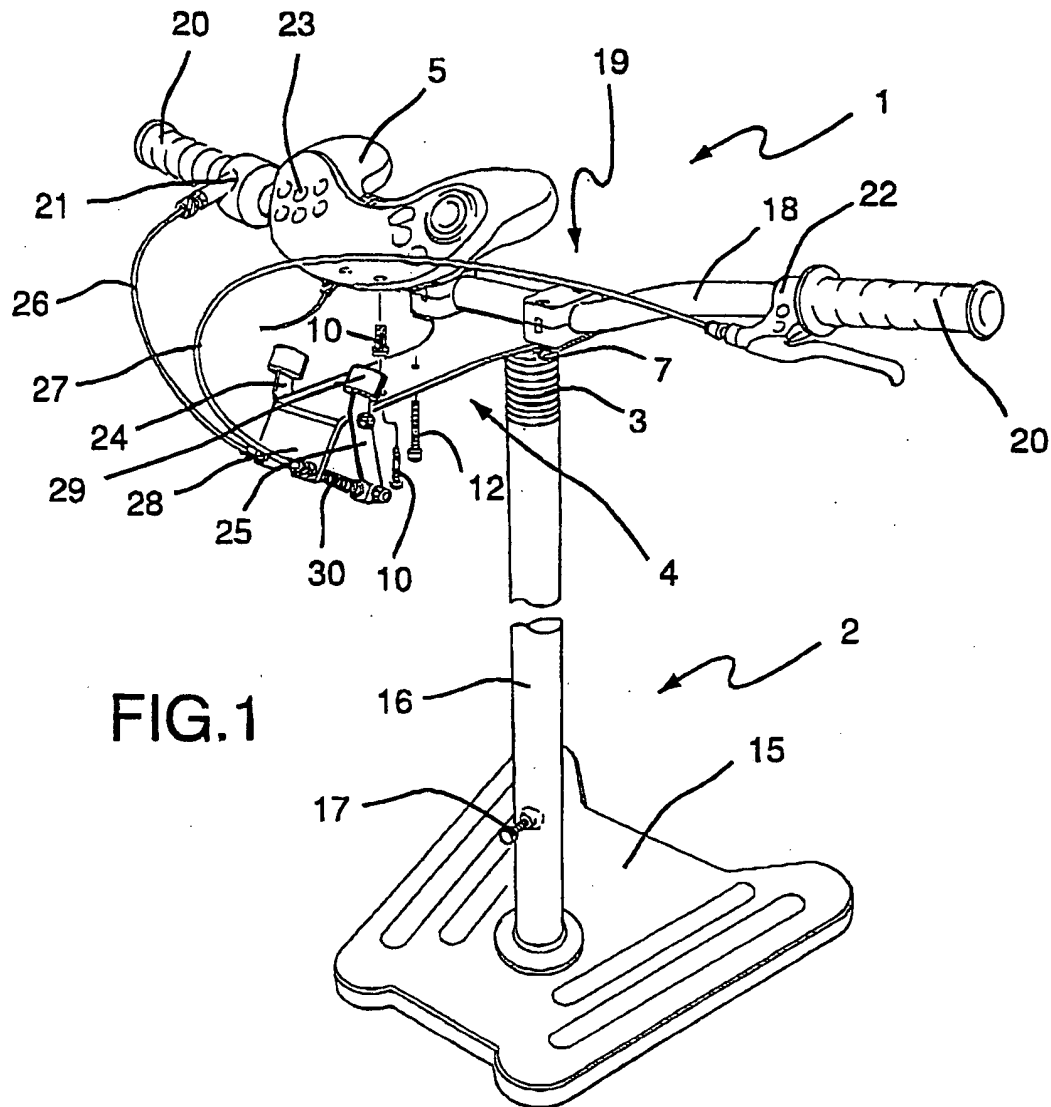
6. Fictitious control and hand manoeuvre device according to any of the previous claims c h a r a c t e r i s e d in that the means of obtaining the freedom of movement between the first section (1) and the second section (2) includes a spring device (3) arranged between the two said parts.

7. Fictitious control and hand manoeuvre device according to any of the previous claims c h a r a c t e r i s e d in that the means of transferring movement between the hand manoeuvre device (21, 22) of the first section (1) and the control device (23) included in

the control and guidance device (5) includes sliding cables (26, 27) that are arranged to affect by movement the control and guidance device included in the control device via arms (24, 25) mounted to pivot on the first part (1) and return springs (30) arranged to interact with these.

8. Fictitious control and hand manoeuvre device according to claim 1
5 characterised in that the second part (2) is adjustable in height and, when in position for use, is provided with a support (15) at the base such as a foot or similar intended to be placed on a surface beneath it.

1/1



INTERNATIONAL SEARCH REPORT

International application No.

PCT/SE 00/02046

A. CLASSIFICATION OF SUBJECT MATTER

IPC7: G06F 3/03, G06K 11/18, A63F 13/06, G05G 9/02

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC7: G06F, G06K, A63F, G05G

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

SE,DK,FI,NO classes as above

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	WO 8911704 A2 (KONIX PRODUCTS LIMITED), 30 November 1989 (30.11.89), page 1, line 1 - page 3, line 15, figures 1-6 --	1-8
A	US 4637605 A (F.RITCHIE), 20 January 1987 (20.01.87), se hela dokumentet --	1-8
A	US 4976435 A (W.SHATFORD), 11 December 1990 (11.12.90), figure 1, claim 1, abstract -- -----	1-8



Further documents are listed in the continuation of Box C.



See patent family annex.

* Special categories of cited documents:

"A" document defining the general state of the art which is not considered to be of particular relevance

"B" earlier application or patent but published on or after the international filing date

"I" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"I" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance: the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance: the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

"&" document member of the same patent family

Date of the actual completion of the international search

12 January 2001

Date of mailing of the international search report

13-02-2001

Name and mailing address of the ISA/

Swedish Patent Office

Box 5055, S-102 42 STOCKHOLM

Facsimile No. +46 8 666 02 86

Authorized officer

Pär Heimdal/LR

Telephone No. +46 8 782 25 00

International application No.
PCT/SE 00/02046

Patent document cited in search report			Publication date	Patent family member(s)		Publication date
WO	8911704	A2	30/11/89	AU	3680289 A	12/12/89
				CA	1311055 A	01/12/92
				DE	68918596 D,T	04/05/95
				EP	0438411 A,B	31/07/91
				GB	2220252 A	04/01/90
				GB	8812716 D	00/00/00
				JP	3505381 T	21/11/91
				KR	9700844 B	20/01/97
				US	5125843 A	30/06/92
US	4637605	A	20/01/87	NONE		
US	4976435	A	11/12/90	WO	9209347 A	11/06/92